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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER	
GUHARAY, KARABI	
ART UNIT	PAPER NUMBER
2889	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/824,363	KIM, CHANG NAM	
	Examiner	Art Unit	
	Karabi Guharay	2889	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *RCE, filed on 2/12/2010*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1,3-7,10,12,13,24 and 26-29* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,3-7,10,12,13,24 and 26-29* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

Continued Examination under 37 CFR 1.114

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 02/12/2010 has been entered.

Response to Amendment

Amendment, filed on 01/12/2010 has been considered and entered.

Claims 1, 6, 10, 24 are amended. Currently claims 1, 3-7, 10, 12-13, 24, 26-29 are pending.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claims 1, 5, 10, 24, 26-29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fleming et al. (US 6,111,357).

Regarding claim 1, Fleming et al. disclose an organic EL display device (see Fig 1A, 5B) comprising a glass substrate (12; line 35 of column 9); first electrode layer or an indium tin oxide strip (anode 14 is made of ITO, lines 19-20 of column 2); a counter electrode (metallized leaders 20; lines 1-6 of column 7); an organic EL layer (16), a second electrode layer or cathode strip (18) and a seal cover (cover 70 of Fig 2A) over the glass substrate 12 (See Fig 5B) , wherein the organic EL layer is formed between the ITO strip (14) and the cathode strip (18; lines 43-52 of column 6) and the counter electrode (20) has a plurality of holes (27 & 29 of Fig 6B & 6C) aligned in first and second directions and wherein the first direction is perpendicular to the second direction (holes are arranged in rows and columns; lines 14-18 of column 7), wherein the holes in the counter electrode have a different shapes such as circular elliptical polygon such as rectangular or triangular (lines 12-16 of column 11) for permitting sufficient radiation directed to seal zone while maintaining sufficient required conductivity (lines 57-65 of column 3).

But, Fleming et al. do not explicitly disclose that the aperture is in the shape of a cross.

However, it is noted that applicant's specific shape of cross does not solve any of the stated problems or yield any unexpected result from the shape of triangle, that is not within the scope of the teachings applied. Therefore it is considered to be a matter of choice, which a person of ordinary skill in the art would have found obvious to select one of the shapes of circle, elliptical polygon such as triangle or cross.

Regarding claim 5, Flemings et al. disclose that the cathode strip is formed of Mg-Ag alloy and aluminum (lines 20-23 of column 2).

Regarding claim 24, Fleming et al. disclose a method of fabricating an organic EL display device (see Fig 1A, 5B) comprising forming a first electrode layer (anode 14 is made of ITO, lines 19-20 of column 2) on a glass substrate (12; line 35 of column 9); forming a counter electrode (metallized leaders 20; lines 1-6 of column 7) over the first electrode layer; forming an organic EL layer (16) over the counter electrode forming a second electrode layer or cathode strip (18) over the EL layer wherein the counter electrode (20) has a plurality of first holes (27 of Fig 6B extending horizontally) and a plurality of second holes (holes 27 extending vertically), wherein the plurality of first holes are aligned in a first direction and the plurality of second holes are aligned in a second direction , wherein the first direction is substantially perpendicular to the second direction (Fig 6B; lines 14-18 of column 7), wherein the holes in the counter electrode could have different shapes such as circular, elliptical or polygon such as rectangular or triangular (lines 12-16 of column 11) for permitting sufficient radiation directed to seal zone while maintaining sufficient required conductivity (lines 57-65 of column 3).

But, Fleming et al. do not explicitly disclose that the aperture/hole is in the shape of a cross.

However, it is noted that applicant's specific shape of cross does not solve any of the stated problems or yield any unexpected result from the shape of triangle, that is not within the scope of the teachings applied. Therefore it is considered to be a matter of choice, which a person of ordinary skill in the art would have found obvious to select one of the shapes of circle, elliptical polygon such as triangle or cross.

Regarding claim 26, Flemings discloses that the holes in the counter electrode have a shape which is one of or combination of a polygon a cross or a circle (lines 12-16 of column 11).

Regarding claims 10 & 27-28, Flemings et al. disclose that the anode and cathode strip overlap to form one or more pixel areas and wherein the counter electrode includes multiple first and second holes in the first and second direction (see Fig 1A; lines 36-49 of column 2).

Regarding claim 29, Fleming et al. disclose that portions of the counter electrode are located between adjacent pairs of the first holes aligned in the first direction, and portions of the counter electrode are located between adjacent pairs of the second holes aligned in the second direction (Fig 6A-6C).

Claims 1, 3-7, 12-13, 24 and 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Applicant's admitted prior art (AAPA), further in view of Fleming et al. (US 6,111,357).

Regarding claims 1, AAPA discloses an organic EL display device (see Fig 1 & Fig 2E) comprising a glass substrate (101), an ITO strip or first electrode layer (102), which is an anode layer; a counter electrode (103), an organic EL layer (104); a cathode strip (105), and a seal cover (109) over the glass substrate (101, see Fig 1) wherein the organic EL layer is formed between ITO strip and the cathode strip or second electrode layer (105), the counter electrode has holes (see Fig 7B) having a shape of polygon.

But AAPA fails to disclose a plurality of holes aligned in first and second directions wherein the first direction is perpendicular to the second direction, the holes are in the counter electrode have a shape of a cross and wherein a first distance between holes along the first direction is smaller than a second distance between holes arranged along the second direction.

However, Fleming et al. in the same filed of OLED, discloses counter electrode (20) having grid like holes (see Fig 6B & 6C) in the seal region (see Fig 1A), wherein plurality of

holes aligned in first and second directions wherein the first direction is perpendicular to the second direction, the holes are in the counter electrode have a shape of either circle , elliptical or polygon such as rectangle or triangle (lines 12-16 of column 7) in order to provide a radiation cured perimeter seal through the patterned holes region (24) of the counter electrode (metallized leaders) to permit sufficient radiation directed to seal zone while maintaining sufficient required conductivity (lines 57-65 of column 3), though , Fleming et al. do not explicitly disclose that the aperture is in the shape of a cross.

However, it is noted that applicant's specific shape of cross does not solve any of the stated problems or yield any unexpected result from the shape of triangle, that is not within the scope of the teachings applied. Therefore it is considered to be a matter of choice, which a person of ordinary skill in the art would have found obvious to select one of the shapes of circle, elliptical polygon such as triangle or cross.

Thus, it would have been obvious to one having ordinary skill in the art at the time the invention was made to provide grid like holes, having a shape of a one of circle, **cross** or triangle, as arranged by Flemings in the device of AAPA, in order to have complete curing of seal through counter electrode while maintaining sufficient conductivity of the counter electrode.

Regarding claim 3, AAPA discloses that the counter electrode (103) is formed of Mo and Cr (Paragraph 12).

Regarding claim 4, AAPA further discloses an insulating layer 106 between the ITO strip and the cathode strip and a and a sealant (108) to adhere the seal cover (109) over the glass substrate wherein the insulating layer extends to meet the crossing point of counter electrode and

the sealant and to an area of glass substrate so as to be formed on a periphery of the organic layer 104 (see Fig 1).

Regarding claim 5, AAPA discloses that the cathode strip is formed of Mg-Ag alloy and aluminum (Paragraph 14).

Regarding claims 6 & 24, AAPA discloses a method of fabricating an organic EL display device (see Fig 2B) comprising forming an ITO strip or first electrode layer(102, 102A) on a glass substrate (101), forming a counter strip (103) on the ITO strip (102A) located in regions other than an emitting region (see Fig 2B) patterning in the counter strip or a second electrode layer to have holes (see Fig 2b, 2C, 2D, & 7B paragraph 19), forming a first insulating layer (106 of Fig 2C) on the glass substrate having ITO strip, forming barrier ribs (107) on the insulating layer (106, see Fig 2D); forming an EL layer (104) and a cathode strip (105, see Fig 2F); and adhering seal cover (109) to the glass substrate (see Fig 2F).

But AAPA fails to disclose a plurality of holes aligned in first and second directions wherein the first direction is perpendicular to the second direction, the holes are in the counter electrode have a shape of cross and wherein a first distance between holes along the first direction is smaller than a second distance between holes arranged along the second direction.

However, Fleming et al. in the same filed of OLED, discloses counter electrode (20) having grid like holes (see Fig 6B & 6C) in the seal region (see Fig 1A), wherein plurality of holes aligned in first and second directions wherein the first direction is perpendicular to the second direction, the holes are in the counter electrode have a shape of either circle , elliptical or polygon such as rectangle or trangle (lines 12-16 of column 7) in order to provide a radiation cured perimeter seal through the patterned holes region (24) of the counter electrode (metallized

leaders) to permit sufficient radiation directed to seal zone while maintaining sufficient required conductivity (lines 57-65 of column 3), though , Fleming et al. do not explicitly disclose that the aperture is in the shape of a cross, it is noted that applicant's specific shape of cross does not solve any of the stated problems or yield any unexpected result from the shape of triangle, that is not within the scope of the teachings applied. Therefore it is considered to be a matter of choice, which a person of ordinary skill in the art would have found obvious to select one of the shapes of circle, elliptical, polygon such as triangle **or cross**.

Thus, it would have been obvious to one having ordinary skill in the art at the time the invention was made to provide grid like holes, having a shape of one of circle, ellipse, rectangle **cross** or triangle as arranged by Flemings in the device of AAPA, in order to have complete curing of seal through counter electrode while maintaining sufficient conductivity of the counter electrode.

Regarding claim 7, AAPA discloses that that the counter strip (103) has a width smaller than that of ITO strip (see paragraph 8).

Regarding claims 12-13, Flemings et al. disclose that the anode and cathode strip overlap to form one or more pixel areas and wherein the counter electrode includes multiple first and second holes in the first and second direction (see Fig 1A; lines 36-49 of column 2). The same reason for combining art as in claim 6 applied.

Regarding claim 26, AAPA discloses that the plurality of holes includes polygons (see Figs 2B-2D).

Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Karabi Guharay whose telephone number is 571-272-2452. The examiner can normally be reached on Monday-Friday 9:00 am - 5:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Minh-Toan Ton can be reached on 571-272-2303. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Karabi Guharay/
Primary Examiner, Art Unit 2889